AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1-5. (canceled).

6. (currently amended): ~~The image matching system according to claim 5, further comprising:~~An image matching system for retrieving a reference image similar to an input image, the image matching system comprising:

means for making a first match between the input image and a plurality of representative three-dimensional object models;

means for making a second match between the reference image and the plurality of the representative three-dimensional object models;

means for retrieving the reference image similar to the input image based on the first match and the second match;

image input means for inputting the input image;

a representative three-dimensional object model storage section for storing the plurality of the representative three-dimensional object models;

first image generation means for generating at least one comparison image close in input condition to the input image for each representative three-dimensional object model among the

plurality of the representative three-dimensional object models based on the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section;

first image matching means for calculating similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model generated by the first image generation means, and selecting the at least one comparison image of a representative three-dimensional object model among the plurality of the representative three-dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the first image matching means;

a reference image storage section for storing reference images of objects;

a reference image matching result storage section for storing similarities between the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section;

result matching means for extracting reference images similar to the input image based on the similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model calculated by the first image matching means and the similarities between the reference images and the plurality of the representative three-dimensional object models stored in the reference image matching result storage section

three-dimensional object model registration means for registering the plurality of the representative three-dimensional object models in the representative three-dimensional object model storage section;

reference image registration means for registering the reference images in the reference image storage section; and

reference image matching result update means for calculating a similarity using the second image matching means, when a new representative three-dimensional object model is registered in the representative three-dimensional object model storage section by the three-dimensional object model registration means, or when a new reference image is registered in the reference image storage section by the reference image registration means, and adding the calculated similarity to the similarities stored in the reference image matching result storage section.

7. (currently amended): ~~The image matching system according to claim 5,~~ An image matching system for retrieving a reference image similar to an input image, the image matching system comprising:

means for making a first match between the input image and a plurality of representative three-dimensional object models;

means for making a second match between the reference image and the plurality of the representative three-dimensional object models;

means for retrieving the reference image similar to the input image based on the first match and the second match;

image input means for inputting the input image;

a representative three-dimensional object model storage section for storing the plurality of the representative three-dimensional object models;

first image generation means for generating at least one comparison image close in input condition to the input image for each representative three-dimensional object model among the plurality of the representative three-dimensional object models based on the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section;

first image matching means for calculating similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model generated by the first image generation means, and selecting the at least one comparison image of a representative three-dimensional object model among the plurality of the representative three-dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the first image matching means;

a reference image storage section for storing reference images of objects;

a reference image matching result storage section for storing similarities between the reference images stored in the reference image storage section and the plurality of the

representative three-dimensional object models stored in the representative three-dimensional object model storage section; and

result matching means for extracting reference images similar to the input image based on the similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model calculated by the first image matching means and the similarities between the reference images and the plurality of the representative three-dimensional object models stored in the reference image matching result storage section,

wherein the first image matching means calculates a similarity between the input image and the at least one comparison image of the each representative three-dimensional object model for a partial region of the input image,

the reference image matching result storage section stores similarities between the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section for the partial region of each of the reference images, and

the result matching means extracts the reference images similar to the input image based on the similarities between the input image and the at least one comparison image of the each representative three-dimensional object model calculated by the first image matching means for the partial region of the input image and the similarities between the reference images and the plurality of the representative three-dimensional object models for the partial region of each of the reference images stored in the reference image matching result storage section.

8. (currently amended): ~~The image matching system according to claim 5,~~ An image matching system for retrieving a reference image similar to an input image, the image matching system comprising:

means for making a first match between the input image and a plurality of representative three-dimensional object models;

means for making a second match between the reference image and the plurality of the representative three-dimensional object models;

means for retrieving the reference image similar to the input image based on the first match and the second match;

image input means for inputting the input image;

a representative three-dimensional object model storage section for storing the plurality of the representative three-dimensional object models;

first image generation means for generating at least one comparison image close in input condition to the input image for each representative three-dimensional object model among the plurality of the representative three-dimensional object models based on the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section;

first image matching means for calculating similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model generated by the first image generation means, and selecting the at least one comparison image

of a representative three-dimensional object model among the plurality of the representative three-dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the first image matching means;

a reference image storage section for storing reference images of objects;

a reference image matching result storage section for storing similarities between the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section; and

result matching means for extracting reference images similar to the input image based on the similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model calculated by the first image matching means and the similarities between the reference images and the plurality of the representative three-dimensional object models stored in the reference image matching result storage section,

wherein the result matching means calculates similarities between the similarities between the input image and the at least one comparison image of the each representative three-dimensional object model and the similarities between the reference images and the plurality of the representative three-dimensional object models, and in the calculation, provides the resultant similarities with weights based on candidate precedence of similarities between the input image and the comparison images and the at least one comparison image of the each representative three-dimensional object model.

9. (canceled).

10. (currently amended): ~~The image matching system according to claim 9, further comprising:~~An image matching system for retrieving a reference image similar to an input image, the image matching system comprising:

means for making a first match between the input image and a plurality of representative three-dimensional object models;

means for making a second match between the reference image and the plurality of the representative three-dimensional object models;

means for retrieving the reference image similar to the input image based on the first match and the second match;

means for determining a reference three-dimensional object model associated with the reference image similar to the input image;

means for retrieving an updated reference image similar to the input image by using the determined reference three-dimensional object model and the input image;

image input means for inputting the input image;

a representative three-dimensional object model storage section for storing the plurality of the representative three-dimensional object models;

first image generation means for generating at least one comparison image close in input condition to the input image for each representative three-dimensional object model among the plurality of the representative three-dimensional object models based on the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section;

first image matching means for calculating similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model generated by the first image generation means, and selecting the at least one comparison image of a representative three-dimensional object model among the plurality of the representative three-dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the first image matching means;

a reference image storage section for storing reference images of objects;

a reference image matching result storage section for storing similarities between the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section;

result matching means for extracting reference images similar to the input image based on the similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model calculated by the first image matching means and the similarities between the reference images and the plurality of the representative three-dimensional object models stored in the reference image matching result storage section;

a reference three-dimensional object model storage section for storing reference three-dimensional object models associated with each reference image among the reference images stored in the reference image storage section;

second image generation means for obtaining reference three-dimensional object models associated with the reference images extracted by the result matching means, from the reference three-dimensional object model storage section, and generating at least one second comparison image close in input condition to the input image for each obtained reference three-dimensional object model based on the obtained reference three-dimensional object models;

second image matching means for calculating similarities between the input image and the at least one second comparison image of each obtained reference three-dimensional object model generated by the second image generation means, and selecting the at least one second comparison of an obtained reference three-dimensional object model among the obtained reference three-dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the second image matching means;

three-dimensional object model registration means for registering the plurality of the representative three-dimensional object models in the representative three-dimensional object model storage section;

reference image registration means for registering the reference images in the reference image storage section;

reference image matching result update means for calculating a similarity using the second image matching means, when a new representative three-dimensional object model is

registered in the representative three-dimensional object model storage section by the three-dimensional object model registration means, or when a new reference image is registered in the reference image storage section by the reference image registration means, and adding the calculated similarity to the similarities stored in the reference image matching result storage section; and

three-dimensional object model generation means responsive to addition of the calculated similarity to the similarities stored in the reference image matching result storage section by the reference image matching result update means, for generating the reference three-dimensional object model associated with the reference image by combining the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section based on the added similarity, and registering the generated reference three-dimensional object model in the reference three-dimensional object model storage section.

11. (previously presented): The image matching system according to claim 10, wherein

the three-dimensional object model generation means generates the reference three-dimensional object models associated with each reference image among the reference images stored in the reference image storage section by combining the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section for a partial region of each of the reference images, based on similarities obtained between the partial region of each of the reference images stored in the reference image storage

section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section, and registers the generated reference three-dimensional object models in the reference three-dimensional object model storage section.

12. (currently amended): ~~The image matching system according to claim 9,~~ An image matching system for retrieving a reference image similar to an input image, the image matching system comprising:

means for making a first match between the input image and a plurality of representative three-dimensional object models;

means for making a second match between the reference image and the plurality of the representative three-dimensional object models;

means for retrieving the reference image similar to the input image based on the first match and the second match;

means for determining a reference three-dimensional object model associated with the reference image similar to the input image;

means for retrieving an updated reference image similar to the input image by using the determined reference three-dimensional object model and the input image;

image input means for inputting the input image;

a representative three-dimensional object model storage section for storing the plurality of the representative three-dimensional object models;

first image generation means for generating at least one comparison image close in input condition to the input image for each representative three-dimensional object model among the plurality of the representative three-dimensional object models based on the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section;

first image matching means for calculating similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model generated by the first image generation means, and selecting the at least one comparison image of a representative three-dimensional object model among the plurality of the representative three-dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the first image matching means;

a reference image storage section for storing reference images of objects;

a reference image matching result storage section for storing similarities between the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section;

result matching means for extracting reference images similar to the input image based on the similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model calculated by the first image matching means and

the similarities between the reference images and the plurality of the representative three-dimensional object models stored in the reference image matching result storage section;

a reference three-dimensional object model storage section for storing reference three-dimensional object models associated with each reference image among the reference images stored in the reference image storage section;

second image generation means for obtaining reference three-dimensional object models associated with the reference images extracted by the result matching means, from the reference three-dimensional object model storage section, and generating at least one second comparison image close in input condition to the input image for each obtained reference three-dimensional object model based on the obtained reference three-dimensional object models; and

second image matching means for calculating similarities between the input image and the at least one second comparison image of each obtained reference three-dimensional object model generated by the second image generation means, and selecting the at least one second comparison of an obtained reference three-dimensional object model among the obtained reference three-dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the second image matching means,

wherein the first image matching means calculates a similarity between the input image and the at least one comparison image of the each representative three-dimensional object model for a partial region of the input image,

the reference image matching result storage section stores similarities between the reference images stored in the reference image storage section and the plurality of the

representative three-dimensional object models stored in the representative three-dimensional object model storage section for the partial region of each of the reference images, and

the result matching means extracts the reference images similar to the input image based on the similarities between the input image and the at least one comparison image of the each representative three-dimensional object model calculated by the first image matching means for the partial region of the input image and the similarities between the reference images and the plurality of the representative three-dimensional object models for the partial region of each of the reference images stored in the reference image matching result storage section.

13. (currently amended): ~~The image matching system according to claim 9,~~ An image matching system for retrieving a reference image similar to an input image, the image matching system comprising:

means for making a first match between the input image and a plurality of representative three-dimensional object models;

means for making a second match between the reference image and the plurality of the representative three-dimensional object models;

means for retrieving the reference image similar to the input image based on the first match and the second match;

means for determining a reference three-dimensional object model associated with the reference image similar to the input image;

means for retrieving an updated reference image similar to the input image by using the determined reference three-dimensional object model and the input image;

image input means for inputting the input image;

a representative three-dimensional object model storage section for storing the plurality of the representative three-dimensional object models;

first image generation means for generating at least one comparison image close in input condition to the input image for each representative three-dimensional object model among the plurality of the representative three-dimensional object models based on the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section;

first image matching means for calculating similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model generated by the first image generation means, and selecting the at least one comparison image of a representative three-dimensional object model among the plurality of the representative three-dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the first image matching means;

a reference image storage section for storing reference images of objects;

a reference image matching result storage section for storing similarities between the reference images stored in the reference image storage section and the plurality of the

representative three-dimensional object models stored in the representative three-dimensional object model storage section;

result matching means for extracting reference images similar to the input image based on the similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model calculated by the first image matching means and the similarities between the reference images and the plurality of the representative three-dimensional object models stored in the reference image matching result storage section;

a reference three-dimensional object model storage section for storing reference three-dimensional object models associated with each reference image among the reference images stored in the reference image storage section;

second image generation means for obtaining reference three-dimensional object models associated with the reference images extracted by the result matching means, from the reference three-dimensional object model storage section, and generating at least one second comparison image close in input condition to the input image for each obtained reference three-dimensional object model based on the obtained reference three-dimensional object models; and

second image matching means for calculating similarities between the input image and the at least one second comparison image of each obtained reference three-dimensional object model generated by the second image generation means, and selecting the at least one second comparison of an obtained reference three-dimensional object model among the obtained reference three-dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the second image matching means,

wherein the result matching means calculates similarities between the similarities between the input image and the at least one comparison image of the each representative three-dimensional object model and the similarities between the reference images and the plurality of the representative three-dimensional object models, and in the calculation, provides the resultant similarities with weights based on candidate precedence of similarities between the input image and the comparison images and the at least one comparison image of the each representative three-dimensional object model.

14. (canceled).

15. (currently amended): ~~The image matching system according to claim 14, further comprising:~~An image matching system for retrieving a reference image similar to an input image, the image matching system comprising:

means for making a first match between the input image and a plurality of representative three-dimensional object models;

means for making a second match between the reference image and the plurality of the representative three-dimensional object models;

means for retrieving the reference image similar to the input image based on the first match and the second match;

means for determining a reference three-dimensional object model associated with the reference image similar to the input image;

conversion means for equating an input condition of the input image with an input condition of the reference image by converting the input image and/or the reference image based on the determined reference three-dimensional object model;

means for retrieving the reference image similar to the input image by making a third match between the input image and the reference image equated to the input condition of the input image;

image input means for inputting the input image;

a representative three-dimensional object model storage section for storing the plurality of the representative three-dimensional object models;

first image generation means for generating at least one comparison image close in input condition to the input image for each representative three-dimensional object model among the plurality of the representative three-dimensional object models based on the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section;

first image matching means for calculating similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model generated by the first image generation means, and selecting the at least one comparison image of a representative three-dimensional object model among the plurality of the representative

three-dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the first image matching means;

a reference image storage section for storing reference images of objects;

a reference image matching result storage section for storing similarities between the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section;

result matching means for extracting reference images similar to the input image based on the similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model calculated by the first image matching means and the similarities between the reference images and the plurality of the representative three-dimensional object models stored in the reference image matching result storage section;

a reference three-dimensional object model storage section for storing reference three-dimensional object models associated with each reference image among the reference images stored in the reference image storage section;

image conversion means for obtaining reference three-dimensional object models associated with the reference images extracted by the result matching means, from the reference three-dimensional object model storage section, equating the input condition of the input image with the input condition of each of the reference images extracted by the result matching means by converting the reference images extracted by the result matching means based on the obtained

reference three-dimensional object models, and generating a partial image of the input image and partial images of the reference images equated to the input condition of the input image;

partial image matching means for calculating a similarity between the partial image of the input image and the partial images of the reference images generated by the image conversion means;

three-dimensional object model registration means for registering the plurality of the representative three-dimensional object models in the representative three-dimensional object model storage section;

reference image registration means for registering the reference images in the reference image storage section;

reference image matching result update means for calculating a similarity using the second image matching means, when a new representative three-dimensional object model is registered in the representative three-dimensional object model storage section by the three-dimensional object model registration means, or when a new reference image is registered in the reference image storage section by the reference image registration means, and adding the calculated similarity to the similarities stored in the reference image matching result storage section; and

three-dimensional object model generation means responsive to addition of the calculated similarity to the similarities stored in the reference image matching result storage section by the reference image matching result update means, for generating the reference three-dimensional object model associated with the reference image by combining the plurality of the

representative three-dimensional object models stored in the representative three-dimensional object model storage section based on the added similarity, and registering the generated reference three-dimensional object model in the reference three-dimensional object model storage section.

16. (previously presented): The image matching system according to claim 15, wherein

the three-dimensional object model generation means generates the reference three-dimensional object models associated with each reference image among the reference images stored in the reference image storage section by combining the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section for a partial region of each of the reference images, based on similarities obtained between the partial region of each of the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section, and registers the generated reference three-dimensional object models in the reference three-dimensional object model storage section.

17. (currently amended): ~~The image matching system according to claim 14,~~ An image matching system for retrieving a reference image similar to an input image, the image matching system comprising:

means for making a first match between the input image and a plurality of representative three-dimensional object models;

means for making a second match between the reference image and the plurality of the representative three-dimensional object models;

means for retrieving the reference image similar to the input image based on the first match and the second match;

means for determining a reference three-dimensional object model associated with the reference image similar to the input image;

conversion means for equating an input condition of the input image with an input condition of the reference image by converting the input image and/or the reference image based on the determined reference three-dimensional object model;

means for retrieving the reference image similar to the input image by making a third match between the input image and the reference image equated to the input condition of the input image;

image input means for inputting the input image;

a representative three-dimensional object model storage section for storing the plurality of the representative three-dimensional object models;

first image generation means for generating at least one comparison image close in input condition to the input image for each representative three-dimensional object model among the plurality of the representative three-dimensional object models based on the plurality of the

representative three-dimensional object models stored in the representative three-dimensional object model storage section;

first image matching means for calculating similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model generated by the first image generation means, and selecting the at least one comparison image of a representative three-dimensional object model among the plurality of the representative three-dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the first image matching means;

a reference image storage section for storing reference images of objects;

a reference image matching result storage section for storing similarities between the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section;

result matching means for extracting reference images similar to the input image based on the similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model calculated by the first image matching means and the similarities between the reference images and the plurality of the representative three-dimensional object models stored in the reference image matching result storage section;

a reference three-dimensional object model storage section for storing reference three-dimensional object models associated with each reference image among the reference images stored in the reference image storage section;

image conversion means for obtaining reference three-dimensional object models associated with the reference images extracted by the result matching means, from the reference three-dimensional object model storage section, equating the input condition of the input image with the input condition of each of the reference images extracted by the result matching means by converting the reference images extracted by the result matching means based on the obtained reference three-dimensional object models, and generating a partial image of the input image and partial images of the reference images equated to the input condition of the input image; and

partial image matching means for calculating a similarity between the partial image of the input image and the partial images of the reference images generated by the image conversion means

wherein the first image matching means calculates a similarity between the input image and the at least one comparison image of the each representative three-dimensional object model for a partial region of the input image,

the reference image matching result storage section stores similarities between the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section for the partial region of each of the reference images, and

the result matching means extracts the reference images similar to the input image based on the similarities between the input image and the at least one comparison image of the each representative three-dimensional object model calculated by the first image matching means for the partial region of the input image and the similarities between the reference images and the

plurality of the representative three-dimensional object models for the partial region of each of the reference images stored in the reference image matching result storage section.

18. (currently amended): ~~The image matching system according to claim 14,~~ An image matching system for retrieving a reference image similar to an input image, the image matching system comprising:

means for making a first match between the input image and a plurality of representative three-dimensional object models;

means for making a second match between the reference image and the plurality of the representative three-dimensional object models;

means for retrieving the reference image similar to the input image based on the first match and the second match;

means for determining a reference three-dimensional object model associated with the reference image similar to the input image;

conversion means for equating an input condition of the input image with an input condition of the reference image by converting the input image and/or the reference image based on the determined reference three-dimensional object model;

means for retrieving the reference image similar to the input image by making a third match between the input image and the reference image equated to the input condition of the input image;

image input means for inputting the input image;

a representative three-dimensional object model storage section for storing the plurality of the representative three-dimensional object models;

first image generation means for generating at least one comparison image close in input condition to the input image for each representative three-dimensional object model among the plurality of the representative three-dimensional object models based on the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section;

first image matching means for calculating similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model generated by the first image generation means, and selecting the at least one comparison image of a representative three-dimensional object model among the plurality of the representative three-dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the first image matching means;

a reference image storage section for storing reference images of objects;

a reference image matching result storage section for storing similarities between the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section;

result matching means for extracting reference images similar to the input image based on the similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model calculated by the first image matching means and the similarities between the reference images and the plurality of the representative three-dimensional object models stored in the reference image matching result storage section;

a reference three-dimensional object model storage section for storing reference three-dimensional object models associated with each reference image among the reference images stored in the reference image storage section;

image conversion means for obtaining reference three-dimensional object models associated with the reference images extracted by the result matching means, from the reference three-dimensional object model storage section, equating the input condition of the input image with the input condition of each of the reference images extracted by the result matching means by converting the reference images extracted by the result matching means based on the obtained reference three-dimensional object models, and generating a partial image of the input image and partial images of the reference images equated to the input condition of the input image; and

partial image matching means for calculating a similarity between the partial image of the input image and the partial images of the reference images generated by the image conversion means,

wherein the result matching means calculates similarities between the similarities between the input image and the at least one comparison image of the each representative three-dimensional object model and the similarities between the reference images and the plurality of

the representative three-dimensional object models, and in the calculation, provides the resultant similarities with weights based on candidate precedence of similarities between the input image and the comparison images and the at least one comparison image of the each representative three-dimensional object model.

19-24. (canceled).

25. (currently amended): ~~The image matching method according to claim 24, further comprising:~~An image matching method for retrieving a reference image similar to an input image, the image matching method comprising:

using a processor to perform

a step of making a first match between the input image and a plurality of representative three-dimensional object models;

a step of making a second match between the reference image and the plurality of the representative three-dimensional object models;

a step of retrieving the reference image similar to the input image based on the first match and the second match;

an image input step of inputting the input image;

a step of storing the plurality of the representative three-dimensional object models in a representative three-dimensional object model storage section;

a first image generation step of generating at least one comparison image close in input condition to the input image for each representative three-dimensional object model among the plurality of the representative three-dimensional object models based on the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section;

a first image matching step of calculating similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model generated by the first image generation step, and selecting the at least one comparison image of a representative three-dimensional object model among the plurality of the representative three-dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the first image matching step;

a step of storing reference images of objects in a reference image storage section;

a step of storing similarities between the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section, in a reference image matching result storage section;

a result matching step of extracting reference images similar to the input image based on the similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model calculated by the first image matching step and

the similarities between the reference images and the plurality of the representative three-dimensional object models stored in the reference image matching result storage section;

a three-dimensional object model registration step of registering the plurality of the representative three-dimensional object models in the representative three-dimensional object model storage section;

a reference image registration step of registering the reference images in the reference image storage section; and

a reference image matching result update step of calculating a similarity in the second image matching step, when a new representative three-dimensional object model is registered in the representative three-dimensional object model storage section in the three-dimensional object model registration step, or when a new reference image is registered in the reference image storage section in the reference image registration in, and adding the calculated similarity to the similarities stored in the reference image matching result storage section.

26. (currently amended): ~~The image matching method according to claim 24,~~ An image matching method for retrieving a reference image similar to an input image, the image matching method comprising:

using a processor to perform

a step of making a first match between the input image and a plurality of representative three-dimensional object models;

a step of making a second match between the reference image and the plurality of the representative three-dimensional object models;

a step of retrieving the reference image similar to the input image based on the first match and the second match;

an image input step of inputting the input image;

a step of storing the plurality of the representative three-dimensional object models in a representative three-dimensional object model storage section;

a first image generation step of generating at least one comparison image close in input condition to the input image for each representative three-dimensional object model among the plurality of the representative three-dimensional object models based on the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section;

a first image matching step of calculating similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model generated by the first image generation step, and selecting the at least one comparison image of a representative three-dimensional object model among the plurality of the representative three-dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the first image matching step;

a step of storing reference images of objects in a reference image storage section;

a step of storing similarities between the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section, in a reference image matching result storage section; and

a result matching step of extracting reference images similar to the input image based on the similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model calculated by the first image matching step and the similarities between the reference images and the plurality of the representative three-dimensional object models stored in the reference image matching result storage section,

wherein at the first image matching step, a similarity between the input image and the at least one comparison image of the each representative three-dimensional object model for a partial region of the input image is calculated,

the reference image matching result storage section stores similarities between the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section for the partial region of each of the reference images, and

at the result matching step, the reference images similar to the input image are extracted based on the similarities between the input image and the at least one comparison image of the each representative three-dimensional object model calculated by the first image matching means for the partial region of the input image and the similarities between the reference images and the

plurality of the representative three-dimensional object models for the partial region of each of the reference images stored in the reference image matching result storage section.

27. (currently amended): ~~The image matching method according to claim 24,~~ An image matching method for retrieving a reference image similar to an input image, the image matching method comprising:

using a processor to perform

a step of making a first match between the input image and a plurality of representative three-dimensional object models;

a step of making a second match between the reference image and the plurality of the representative three-dimensional object models;

a step of retrieving the reference image similar to the input image based on the first match and the second match;

an image input step of inputting the input image;

a step of storing the plurality of the representative three-dimensional object models in a representative three-dimensional object model storage section;

a first image generation step of generating at least one comparison image close in input condition to the input image for each representative three-dimensional object model among the plurality of the representative three-dimensional object models based on the plurality of the

representative three-dimensional object models stored in the representative three-dimensional object model storage section;

a first image matching step of calculating similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model generated by the first image generation step, and selecting the at least one comparison image of a representative three-dimensional object model among the plurality of the representative three-dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the first image matching step;

a step of storing reference images of objects in a reference image storage section;

a step of storing similarities between the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section, in a reference image matching result storage section; and

a result matching step of extracting reference images similar to the input image based on the similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model calculated by the first image matching step and the similarities between the reference images and the plurality of the representative three-dimensional object models stored in the reference image matching result storage section,

wherein at the result matching step, similarities between the similarities between the input image and the at least one comparison image of the each representative three-dimensional object model and the similarities between the reference images and the plurality of the

representative three-dimensional object models are calculated, and in the calculation, the resultant similarities are provided with weights based on candidate precedence of similarities between the input image and the comparison images and the at least one comparison image of the each representative three-dimensional object model.

28. (canceled).

29. (currently amended): ~~The image matching method according to claim 28, further comprising:~~An image matching method for retrieving a reference image similar to an input image, the image matching method comprising:

using a processor to perform

a step of making a first match between the input image and a plurality of representative three-dimensional object models;

a step of making a second match between the reference image and the plurality of the representative three-dimensional object models;

a step of retrieving the reference image similar to the input image based on the first match and the second match;

a step of determining a reference three-dimensional object model associated with the reference image similar to the input image;

a step of retrieving an updated reference image similar to the input image by using the determined reference three-dimensional object model and the input image;

an image input step of inputting the input image;

a step of storing the plurality of the representative three-dimensional object models in a representative three-dimensional object model storage section;

a first image generation step of generating at least one comparison image close in input condition to the input image for each representative three-dimensional object model among the plurality of the representative three-dimensional object models based on the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section;

a first image matching step of calculating similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model generated by the first image generation step, and selecting the at least one comparison image of a representative three-dimensional object model among the plurality of the representative three-dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the first image matching step;

a step of storing reference images of objects in a reference image storage section;

a step of storing similarities between the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in

the representative three-dimensional object model storage section, in a reference image matching result storage section;

a result matching step of extracting reference images similar to the input image based on the similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model calculated by the first image matching step and the similarities between the reference images and the plurality of the representative three-dimensional object models stored in the reference image matching result storage section;

a step of storing reference three-dimensional object models associated with each reference image among the reference images stored in the reference image storage section;

a second image generation step of obtaining reference three-dimensional object models associated with the reference images extracted by the result matching step, from the reference three-dimensional object model storage section, and generating at least one second comparison image close in input condition to the input image for each obtained reference three-dimensional object model based on the obtained reference three-dimensional object models;

a second image matching step of calculating similarities between the input image and the at least one second comparison image of each obtained reference three-dimensional object model generated by the second image generation step, and selecting the at least one second comparison of an obtained reference three-dimensional object model among the obtained reference three-dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the second image matching step;

a three-dimensional object model registration step of registering the plurality of the representative three-dimensional object models in the representative three-dimensional object model storage section;

a reference image registration step of registering the reference images in the reference image storage section;

a reference image matching result update step of calculating a similarity in the second image matching step, when a new representative three-dimensional object model is registered in the representative three-dimensional object model storage section in the three-dimensional object model registration step, or when a new reference image is registered in the reference image storage section in the reference image registration in, and adding the calculated similarity to the similarities stored in the reference image matching result storage section; and

a three-dimensional object model generation step of, in response to addition of the calculated similarity to the similarities stored in the reference image matching result storage section by the reference image matching result update step, generating the reference three-dimensional object model associated with the reference image by combining the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section based on the added similarity, and registering the generated reference three-dimensional object model in the reference three-dimensional object model storage section.

30. (previously presented): The image matching method according to claim 29, wherein

at the three-dimensional object model generation step, the reference three-dimensional object models associated with each reference image among the reference images stored in the reference image storage section is generated by combining the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section for a partial region of each of the reference images, based on similarities obtained between the partial region of each of the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section, and the generated reference three-dimensional object models are registered in the reference three-dimensional object model storage section.

31. (currently amended): ~~The image matching method according to claim 28,~~ An image matching method for retrieving a reference image similar to an input image, the image matching method comprising:

using a processor to perform

a step of making a first match between the input image and a plurality of representative three-dimensional object models;

a step of making a second match between the reference image and the plurality of the representative three-dimensional object models;

a step of retrieving the reference image similar to the input image based on the first match and the second match;

a step of determining a reference three-dimensional object model associated with the reference image similar to the input image;

a step of retrieving an updated reference image similar to the input image by using the determined reference three-dimensional object model and the input image;

an image input step of inputting the input image;

a step of storing the plurality of the representative three-dimensional object models in a representative three-dimensional object model storage section;

a first image generation step of generating at least one comparison image close in input condition to the input image for each representative three-dimensional object model among the plurality of the representative three-dimensional object models based on the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section;

a first image matching step of calculating similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model generated by the first image generation step, and selecting the at least one comparison image of a representative three-dimensional object model among the plurality of the representative three-dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the first image matching step;

a step of storing reference images of objects in a reference image storage section;

a step of storing similarities between the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section, in a reference image matching result storage section;

a result matching step of extracting reference images similar to the input image based on the similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model calculated by the first image matching step and the similarities between the reference images and the plurality of the representative three-dimensional object models stored in the reference image matching result storage section;

a step of storing reference three-dimensional object models associated with each reference image among the reference images stored in the reference image storage section;

a second image generation step of obtaining reference three-dimensional object models associated with the reference images extracted by the result matching step, from the reference three-dimensional object model storage section, and generating at least one second comparison image close in input condition to the input image for each obtained reference three-dimensional object model based on the obtained reference three-dimensional object models; and

a second image matching step of calculating similarities between the input image and the at least one second comparison image of each obtained reference three-dimensional object model generated by the second image generation step, and selecting the at least one second comparison of an obtained reference three-dimensional object model among the obtained reference three-

dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the second image matching step,

wherein at the first image matching step, a similarity between the input image and the at least one comparison image of the each representative three-dimensional object model for a partial region of the input image is calculated,

the reference image matching result storage section stores similarities between the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section for the partial region of each of the reference images, and

at the result matching step, the reference images similar to the input image are extracted based on the similarities between the input image and the at least one comparison image of the each representative three-dimensional object model calculated by the first image matching means for the partial region of the input image and the similarities between the reference images and the plurality of the representative three-dimensional object models for the partial region of each of the reference images stored in the reference image matching result storage section.

32. (currently amended): ~~The image matching method according to claim 28,~~ An image matching method for retrieving a reference image similar to an input image, the image matching method comprising:

using a processor to perform

a step of making a first match between the input image and a plurality of representative three-dimensional object models;

a step of making a second match between the reference image and the plurality of the representative three-dimensional object models;

a step of retrieving the reference image similar to the input image based on the first match and the second match;

a step of determining a reference three-dimensional object model associated with the reference image similar to the input image;

a step of retrieving an updated reference image similar to the input image by using the determined reference three-dimensional object model and the input image;

an image input step of inputting the input image;

a step of storing the plurality of the representative three-dimensional object models in a representative three-dimensional object model storage section;

a first image generation step of generating at least one comparison image close in input condition to the input image for each representative three-dimensional object model among the plurality of the representative three-dimensional object models based on the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section;

a first image matching step of calculating similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model generated

by the first image generation step, and selecting the at least one comparison image of a representative three-dimensional object model among the plurality of the representative three-dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the first image matching step;

a step of storing reference images of objects in a reference image storage section;

a step of storing similarities between the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section, in a reference image matching result storage section;

a result matching step of extracting reference images similar to the input image based on the similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model calculated by the first image matching step and the similarities between the reference images and the plurality of the representative three-dimensional object models stored in the reference image matching result storage section;

a step of storing reference three-dimensional object models associated with each reference image among the reference images stored in the reference image storage section;

a second image generation step of obtaining reference three-dimensional object models associated with the reference images extracted by the result matching step, from the reference three-dimensional object model storage section, and generating at least one second comparison image close in input condition to the input image for each obtained reference three-dimensional object model based on the obtained reference three-dimensional object models; and

a second image matching step of calculating similarities between the input image and the at least one second comparison image of each obtained reference three-dimensional object model generated by the second image generation step, and selecting the at least one second comparison of an obtained reference three-dimensional object model among the obtained reference three-dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the second image matching step,

wherein at the result matching step, similarities between the similarities between the input image and the at least one comparison image of the each representative three-dimensional object model and the similarities between the reference images and the plurality of the representative three-dimensional object models are calculated, and in the calculation, the resultant similarities are provided with weights based on candidate precedence of similarities between the input image and the comparison images and the at least one comparison image of the each representative three-dimensional object model.

33. (canceled).

34. (currently amended): ~~The image matching method according to claim 33, further comprising:~~An image matching method for retrieving a reference image similar to an input image, the image matching method comprising:

using a processor to perform

a step of making a first match between the input image and a plurality of representative three-dimensional object models;

a step of making a second match between the reference image and the plurality of the representative three-dimensional object models;

a step of retrieving the reference image similar to the input image based on the first match and the second match;

a step determining a reference three-dimensional object model associated with the reference image similar to the input image;

a conversion step of equating an input condition of the input image with an input condition of the reference image by converting the input image and/or the reference image based on the determined reference three-dimensional object model;

a step of retrieving the reference image similar to the input image by making a third match between the input image and the reference image equated to the input condition of the input image;

an image input step of inputting the input image;

a step of storing the plurality of the representative three-dimensional object models in a representative three-dimensional object model storage section;

a first image generation step of generating at least one comparison image close in input condition to the input image for each representative three-dimensional object model among the plurality of the representative three-dimensional object models based on the plurality of the

representative three-dimensional object models stored in the representative three-dimensional object model storage section;

a first image matching step of calculating similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model generated by the first image generation step, and selecting the at least one comparison image of a representative three-dimensional object model among the plurality of the representative three-dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the first image matching step;

a step of storing reference images of objects in a reference image storage section;

a step of storing similarities between the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section, in a reference image matching result storage section;

a result matching step of extracting reference images similar to the input image based on the similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model calculated by the first image matching step and the similarities between the reference images and the plurality of the representative three-dimensional object models stored in the reference image matching result storage section;

a step of storing reference three-dimensional object models associated with each reference image among the reference images stored in the reference image storage section;

an image conversion step of obtaining reference three-dimensional object models associated with the reference images extracted by the result matching step, from the reference three-dimensional object model storage section, equating the input condition of the input image with the input condition of each of the reference images extracted by the result matching step by converting the reference images extracted at the result matching step based on the obtained reference three-dimensional object models, and generating a partial image of the input image and partial images of the reference images equated to the input condition of the input image;

a partial image matching step of calculating a similarity between the partial image of the input image and the partial images of the reference images generated by the image conversion step;

a three-dimensional object model registration step of registering the plurality of the representative three-dimensional object models in the representative three-dimensional object model storage section;

a reference image registration step of registering the reference images in the reference image storage section;

a reference image matching result update step of calculating a similarity in the second image matching step, when a new representative three-dimensional object model is registered in the representative three-dimensional object model storage section in the three-dimensional object model registration step, or when a new reference image is registered in the reference image storage section in the reference image registration in, and adding the calculated similarity to the similarities stored in the reference image matching result storage section; and

a three-dimensional object model generation step of, in response to addition of the calculated similarity to the similarities stored in the reference image matching result storage section by the reference image matching result update step, generating the reference three-dimensional object model associated with the reference image by combining the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section based on the added similarity, and registering the generated reference three-dimensional object model in the reference three-dimensional object model storage section.

35. (previously presented): The image matching method according to claim 34, wherein at the three-dimensional object model generation step, the reference three-dimensional object models associated with each reference image among the reference images stored in the reference image storage section is generated by combining the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section for a partial region of each of the reference images, based on similarities obtained between the partial region of each of the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section, and the generated reference three-dimensional object models are registered in the reference three-dimensional object model storage section.

36. (currently amended): ~~The image matching method according to claim 33,~~ An image matching method for retrieving a reference image similar to an input image, the image matching method comprising:

using a processor to perform

a step of making a first match between the input image and a plurality of representative three-dimensional object models;

a step of making a second match between the reference image and the plurality of the representative three-dimensional object models;

a step of retrieving the reference image similar to the input image based on the first match and the second match;

a step determining a reference three-dimensional object model associated with the reference image similar to the input image;

a conversion step of equating an input condition of the input image with an input condition of the reference image by converting the input image and/or the reference image based on the determined reference three-dimensional object model;

a step of retrieving the reference image similar to the input image by making a third match between the input image and the reference image equated to the input condition of the input image;

an image input step of inputting the input image;

a step of storing the plurality of the representative three-dimensional object models in a representative three-dimensional object model storage section;

a first image generation step of generating at least one comparison image close in input condition to the input image for each representative three-dimensional object model among the plurality of the representative three-dimensional object models based on the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section;

a first image matching step of calculating similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model generated by the first image generation step, and selecting the at least one comparison image of a representative three-dimensional object model among the plurality of the representative three-dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the first image matching step;

a step of storing reference images of objects in a reference image storage section;

a step of storing similarities between the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section, in a reference image matching result storage section;

a result matching step of extracting reference images similar to the input image based on the similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model calculated by the first image matching step and

the similarities between the reference images and the plurality of the representative three-dimensional object models stored in the reference image matching result storage section;

a step of storing reference three-dimensional object models associated with each reference image among the reference images stored in the reference image storage section;

an image conversion step of obtaining reference three-dimensional object models associated with the reference images extracted by the result matching step, from the reference three-dimensional object model storage section, equating the input condition of the input image with the input condition of each of the reference images extracted by the result matching step by converting the reference images extracted at the result matching step based on the obtained reference three-dimensional object models, and generating a partial image of the input image and partial images of the reference images equated to the input condition of the input image; and

a partial image matching step of calculating a similarity between the partial image of the input image and the partial images of the reference images generated by the image conversion step,

wherein at the first image matching step, a similarity between the input image and the at least one comparison image of the each representative three-dimensional object model for a partial region of the input image is calculated,

the reference image matching result storage section stores similarities between the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section for the partial region of each of the reference images, and

at the result matching step, the reference images similar to the input image are extracted based on the similarities between the input image and the at least one comparison image of the each representative three-dimensional object model calculated by the first image matching means for the partial region of the input image and the similarities between the reference images and the plurality of the representative three-dimensional object models for the partial region of each of the reference images stored in the reference image matching result storage section.

37. (currently amended): ~~The image matching method according to claim 33,~~ An image matching method for retrieving a reference image similar to an input image, the image matching method comprising:

using a processor to perform

a step of making a first match between the input image and a plurality of representative three-dimensional object models;

a step of making a second match between the reference image and the plurality of the representative three-dimensional object models;

a step of retrieving the reference image similar to the input image based on the first match and the second match;

a step determining a reference three-dimensional object model associated with the reference image similar to the input image;

a conversion step of equating an input condition of the input image with an input condition of the reference image by converting the input image and/or the reference image based on the determined reference three-dimensional object model;

a step of retrieving the reference image similar to the input image by making a third match between the input image and the reference image equated to the input condition of the input image;

an image input step of inputting the input image;

a step of storing the plurality of the representative three-dimensional object models in a representative three-dimensional object model storage section;

a first image generation step of generating at least one comparison image close in input condition to the input image for each representative three-dimensional object model among the plurality of the representative three-dimensional object models based on the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section;

a first image matching step of calculating similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model generated by the first image generation step, and selecting the at least one comparison image of a representative three-dimensional object model among the plurality of the representative three-dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the first image matching step;

a step of storing reference images of objects in a reference image storage section;

a step of storing similarities between the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section, in a reference image matching result storage section;

a result matching step of extracting reference images similar to the input image based on the similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model calculated by the first image matching step and the similarities between the reference images and the plurality of the representative three-dimensional object models stored in the reference image matching result storage section;

a step of storing reference three-dimensional object models associated with each reference image among the reference images stored in the reference image storage section;

an image conversion step of obtaining reference three-dimensional object models associated with the reference images extracted by the result matching step, from the reference three-dimensional object model storage section, equating the input condition of the input image with the input condition of each of the reference images extracted by the result matching step by converting the reference images extracted at the result matching step based on the obtained reference three-dimensional object models, and generating a partial image of the input image and partial images of the reference images equated to the input condition of the input image; and

a partial image matching step of calculating a similarity between the partial image of the input image and the partial images of the reference images generated by the image conversion step,

wherein at the result matching step, similarities between the similarities between the input image and the at least one comparison image of the each representative three-dimensional object model and the similarities between the reference images and the plurality of the representative three-dimensional object models are calculated, and in the calculation, the resultant similarities are provided with weights based on candidate precedence of similarities between the input image and the comparison images and the at least one comparison image of the each representative three-dimensional object model.

38-43. (canceled).

44. (currently amended): ~~The computer readable recording medium according to claim 43, the image matching method further comprising:~~A computer readable recording medium storing a program for making a computer execute an image matching method to retrieve a reference image similar to an input image, the image matching method comprising:

a step of making a first match between the input image and a plurality of representative three-dimensional object models;

a step of making a second match between the reference image and the plurality of the representative three-dimensional object models;

a step of retrieving the reference image similar to the input image based on the first match and the second match;

an image input step of inputting the input image;

a step of storing the plurality of the representative three-dimensional object models in a representative three-dimensional object model storage section;

a first image generation step of generating at least one comparison image close in input condition to the input image for each representative three-dimensional object model among the plurality of the representative three-dimensional object models based on the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section;

a first image matching step of calculating similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model generated by the first image generation step, and selecting the at least one comparison image of a representative three-dimensional object model among the plurality of the representative three-dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the first image matching step;

a step of storing reference images of objects in a reference image storage section;

a step of storing similarities between the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section, in a reference image matching result storage section;

a result matching step of extracting reference images similar to the input image based on the similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model calculated by the first image matching step and the similarities between the reference images and the plurality of the representative three-dimensional object models stored in the reference image matching result storage section;

a three-dimensional object model registration step of registering the plurality of the representative three-dimensional object models in the representative three-dimensional object model storage section;

a reference image registration step of registering the reference images in the reference image storage section; and

a reference image matching result update step of calculating a similarity in the second image matching step, when a new representative three-dimensional object model is registered in the representative three-dimensional object model storage section in the three-dimensional object model registration step, or when a new reference image is registered in the reference image storage section in the reference image registration in, and adding the calculated similarity to the similarities stored in the reference image matching result storage section.

45. (currently amended): ~~The computer readable recording medium according to claim 43,~~ A computer readable recording medium storing a program for making a computer execute an image matching method to retrieve a reference image similar to an input image, the image matching method comprising:

a step of making a first match between the input image and a plurality of representative three-dimensional object models;

a step of making a second match between the reference image and the plurality of the representative three-dimensional object models;

a step of retrieving the reference image similar to the input image based on the first match and the second match;

an image input step of inputting the input image;

a step of storing the plurality of the representative three-dimensional object models in a representative three-dimensional object model storage section;

a first image generation step of generating at least one comparison image close in input condition to the input image for each representative three-dimensional object model among the plurality of the representative three-dimensional object models based on the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section;

a first image matching step of calculating similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model generated

by the first image generation step, and selecting the at least one comparison image of a representative three-dimensional object model among the plurality of the representative three-dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the first image matching step;

a step of storing reference images of objects in a reference image storage section;

a step of storing similarities between the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section, in a reference image matching result storage section; and

a result matching step of extracting reference images similar to the input image based on the similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model calculated by the first image matching step and the similarities between the reference images and the plurality of the representative three-dimensional object models stored in the reference image matching result storage section,

wherein at the first image matching step, a similarity between the input image and the at least one comparison image of the each representative three-dimensional object model for a partial region of the input image is calculated,

the reference image matching result storage section stores similarities between the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section for the partial region of each of the reference images, and

at the result matching step, the reference images similar to the input image are extracted based on the similarities between the input image and the at least one comparison image of the each representative three-dimensional object model calculated by the first image matching means for the partial region of the input image and the similarities between the reference images and the plurality of the representative three-dimensional object models for the partial region of each of the reference images stored in the reference image matching result storage section.

46. (currently amended): ~~The computer readable recording medium according to claim 43,~~ A computer readable recording medium storing a program for making a computer execute an image matching method to retrieve a reference image similar to an input image, the image matching method comprising:

a step of making a first match between the input image and a plurality of representative three-dimensional object models;

a step of making a second match between the reference image and the plurality of the representative three-dimensional object models;

a step of retrieving the reference image similar to the input image based on the first match and the second match;

an image input step of inputting the input image;

a step of storing the plurality of the representative three-dimensional object models in a representative three-dimensional object model storage section;

a first image generation step of generating at least one comparison image close in input condition to the input image for each representative three-dimensional object model among the plurality of the representative three-dimensional object models based on the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section;

a first image matching step of calculating similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model generated by the first image generation step, and selecting the at least one comparison image of a representative three-dimensional object model among the plurality of the representative three-dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the first image matching step;

a step of storing reference images of objects in a reference image storage section;

a step of storing similarities between the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section, in a reference image matching result storage section; and

a result matching step of extracting reference images similar to the input image based on the similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model calculated by the first image matching step and the similarities between the reference images and the plurality of the representative three-dimensional object models stored in the reference image matching result storage section,

wherein at the result matching step, similarities between the similarities between the input image and the at least one comparison image of the each representative three-dimensional object model and the similarities between the reference images and the plurality of the representative three-dimensional object models are calculated, and in the calculation, the resultant similarities are provided with weights based on candidate precedence of similarities between the input image and the comparison images and the at least one comparison image of the each representative three-dimensional object model.

47. (canceled).

48. (currently amended): ~~The computer readable recording medium according to claim 47, the image matching method further comprising:~~A computer readable recording medium storing a program for making a computer execute an image matching method to retrieve a reference image similar to an input image, the image matching method comprising:

a step of making a first match between the input image and a plurality of representative three-dimensional object models;

a step of making a second match between the reference image and the plurality of the representative three-dimensional object models;

a step of retrieving the reference image similar to the input image based on the first match and the second match;

a step of determining a reference three-dimensional object model associated with the reference image similar to the input image;

a step of retrieving an updated reference image similar to the input image by using the determined reference three-dimensional object model and the input image;

an image input step of inputting the input image;

a step of storing the plurality of the representative three-dimensional object models in a representative three-dimensional object model storage section;

a first image generation step of generating at least one comparison image close in input condition to the input image for each representative three-dimensional object model among the plurality of the representative three-dimensional object models based on the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section;

a first image matching step of calculating similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model generated by the first image generation step, and selecting the at least one comparison image of a representative three-dimensional object model among the plurality of the representative three-dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the first image matching step;

a step of storing reference images of objects in a reference image storage section;

a step of storing similarities between the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section, in a reference image matching result storage section;

a result matching step of extracting reference images similar to the input image based on the similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model calculated by the first image matching step and the similarities between the reference images and the plurality of the representative three-dimensional object models stored in the reference image matching result storage section;

a step of storing reference three-dimensional object models associated with each reference image among the reference images stored in the reference image storage section;

a second image generation step of obtaining reference three-dimensional object models associated with the reference images extracted by the result matching step, from the reference three-dimensional object model storage section, and generating at least one second comparison image close in input condition to the input image for each obtained reference three-dimensional object model based on the obtained reference three-dimensional object models;

a second image matching step of calculating similarities between the input image and the at least one second comparison image of each obtained reference three-dimensional object model generated by the second image generation step, and selecting the at least one second comparison of an obtained reference three-dimensional object model among the obtained reference three-

dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the second image matching step;

a three-dimensional object model registration step of registering the plurality of the representative three-dimensional object models in the representative three-dimensional object model storage section;

a reference image registration step of registering the reference images in the reference image storage section;

a reference image matching result update step of calculating a similarity in the second image matching step, when a new representative three-dimensional object model is registered in the representative three-dimensional object model storage section in the three-dimensional object model registration step, or when a new reference image is registered in the reference image storage section in the reference image registration in, and adding the calculated similarity to the similarities stored in the reference image matching result storage section; and

a three-dimensional object model generation step of, in response to addition of the calculated similarity to the similarities stored in the reference image matching result storage section by the reference image matching result update step, generating the reference three-dimensional object model associated with the reference image by combining the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section based on the added similarity, and registering the generated reference three-dimensional object model in the reference three-dimensional object model storage section.

49. (previously presented): The computer readable recording medium according to claim 48, wherein

at the three-dimensional object model generation step, the reference three-dimensional object models associated with each reference image among the reference images stored in the reference image storage section is generated by combining the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section for a partial region of each of the reference images, based on similarities obtained between the partial region of each of the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section, and the generated reference three-dimensional object models are registered in the reference three-dimensional object model storage section.

50. (currently amended): ~~The computer readable recording medium according to claim 47,~~ A computer readable recording medium storing a program for making a computer execute an image matching method to retrieve a reference image similar to an input image, the image matching method comprising:

a step of making a first match between the input image and a plurality of representative three-dimensional object models;

a step of making a second match between the reference image and the plurality of the representative three-dimensional object models;

a step of retrieving the reference image similar to the input image based on the first match and the second match;

a step of determining a reference three-dimensional object model associated with the reference image similar to the input image;

a step of retrieving an updated reference image similar to the input image by using the determined reference three-dimensional object model and the input image;

an image input step of inputting the input image;

a step of storing the plurality of the representative three-dimensional object models in a representative three-dimensional object model storage section;

a first image generation step of generating at least one comparison image close in input condition to the input image for each representative three-dimensional object model among the plurality of the representative three-dimensional object models based on the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section;

a first image matching step of calculating similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model generated by the first image generation step, and selecting the at least one comparison image of a representative three-dimensional object model among the plurality of the representative three-

dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the first image matching step;

a step of storing reference images of objects in a reference image storage section;

a step of storing similarities between the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section, in a reference image matching result storage section;

a result matching step of extracting reference images similar to the input image based on the similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model calculated by the first image matching step and the similarities between the reference images and the plurality of the representative three-dimensional object models stored in the reference image matching result storage section;

a step of storing reference three-dimensional object models associated with each reference image among the reference images stored in the reference image storage section;

a second image generation step of obtaining reference three-dimensional object models associated with the reference images extracted by the result matching step, from the reference three-dimensional object model storage section, and generating at least one second comparison image close in input condition to the input image for each obtained reference three-dimensional object model based on the obtained reference three-dimensional object models; and

a second image matching step of calculating similarities between the input image and the at least one second comparison image of each obtained reference three-dimensional object model generated by the second image generation step, and selecting the at least one second comparison of an obtained reference three-dimensional object model among the obtained reference three-dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the second image matching step,

wherein at the first image matching step, a similarity between the input image and the at least one comparison image of the each representative three-dimensional object model for a partial region of the input image is calculated,

the reference image matching result storage section stores similarities between the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section for the partial region of each of the reference images, and

at the result matching step, the reference images similar to the input image are extracted based on the similarities between the input image and the at least one comparison image of the each representative three-dimensional object model calculated by the first image matching means for the partial region of the input image and the similarities between the reference images and the plurality of the representative three-dimensional object models for the partial region of each of the reference images stored in the reference image matching result storage section.

51. (currently amended): ~~The computer readable recording medium according to claim 47,~~ A computer readable recording medium storing a program for making a computer execute an image matching method to retrieve a reference image similar to an input image, the image matching method comprising:

a step of making a first match between the input image and a plurality of representative three-dimensional object models;

a step of making a second match between the reference image and the plurality of the representative three-dimensional object models;

a step of retrieving the reference image similar to the input image based on the first match and the second match;

a step of determining a reference three-dimensional object model associated with the reference image similar to the input image;

a step of retrieving an updated reference image similar to the input image by using the determined reference three-dimensional object model and the input image;

an image input step of inputting the input image;

a step of storing the plurality of the representative three-dimensional object models in a representative three-dimensional object model storage section;

a first image generation step of generating at least one comparison image close in input condition to the input image for each representative three-dimensional object model among the plurality of the representative three-dimensional object models based on the plurality of the

representative three-dimensional object models stored in the representative three-dimensional object model storage section;

a first image matching step of calculating similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model generated by the first image generation step, and selecting the at least one comparison image of a representative three-dimensional object model among the plurality of the representative three-dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the first image matching step;

a step of storing reference images of objects in a reference image storage section;

a step of storing similarities between the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section, in a reference image matching result storage section;

a result matching step of extracting reference images similar to the input image based on the similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model calculated by the first image matching step and the similarities between the reference images and the plurality of the representative three-dimensional object models stored in the reference image matching result storage section;

a step of storing reference three-dimensional object models associated with each reference image among the reference images stored in the reference image storage section;

a second image generation step of obtaining reference three-dimensional object models associated with the reference images extracted by the result matching step, from the reference three-dimensional object model storage section, and generating at least one second comparison image close in input condition to the input image for each obtained reference three-dimensional object model based on the obtained reference three-dimensional object models; and

a second image matching step of calculating similarities between the input image and the at least one second comparison image of each obtained reference three-dimensional object model generated by the second image generation step, and selecting the at least one second comparison of an obtained reference three-dimensional object model among the obtained reference three-dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the second image matching step,

wherein at the result matching step, similarities between the similarities between the input image and the at least one comparison image of the each representative three-dimensional object model and the similarities between the reference images and the plurality of the representative three-dimensional object models are calculated, and in the calculation, the resultant similarities are provided with weights based on candidate precedence of similarities between the input image and the comparison images and the at least one comparison image of the each representative three-dimensional object model.

52. (canceled).

53. (currently amended): ~~The computer readable recording medium according to claim 52, the image matching method further comprising:~~A computer readable recording medium storing a program for making a computer execute an image matching method to retrieve a reference image similar to an input image, the image matching method comprising:

a step of making a first match between the input image and a plurality of representative three-dimensional object models;

a step of making a second match between the reference image and the plurality of the representative three-dimensional object models;

a step of retrieving the reference image similar to the input image based on the first match and the second match;

a step determining a reference three-dimensional object model associated with the reference image similar to the input image;

a conversion step of equating an input condition of the input image with an input condition of the reference image by converting the input image and/or the reference image based on the determined reference three-dimensional object model;

a step of retrieving the reference image similar to the input image by making a third match between the input image and the reference image equated to the input condition of the input image;

an image input step of inputting the input image;

a step of storing the plurality of the representative three-dimensional object models in a representative three-dimensional object model storage section;

a first image generation step of generating at least one comparison image close in input condition to the input image for each representative three-dimensional object model among the plurality of the representative three-dimensional object models based on the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section;

a first image matching step of calculating similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model generated by the first image generation step, and selecting the at least one comparison image of a representative three-dimensional object model among the plurality of the representative three-dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the first image matching step;

a step of storing reference images of objects in a reference image storage section;

a step of storing similarities between the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section, in a reference image matching result storage section;

a result matching step of extracting reference images similar to the input image based on the similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model calculated by the first image matching step and

the similarities between the reference images and the plurality of the representative three-dimensional object models stored in the reference image matching result storage section;

a step of storing reference three-dimensional object models associated with each reference image among the reference images stored in the reference image storage section;

an image conversion step of obtaining reference three-dimensional object models associated with the reference images extracted by the result matching step, from the reference three-dimensional object model storage section, equating the input condition of the input image with the input condition of each of the reference images extracted by the result matching step by converting the reference images extracted at the result matching step based on the obtained reference three-dimensional object models, and generating a partial image of the input image and partial images of the reference images equated to the input condition of the input image;

a partial image matching step of calculating a similarity between the partial image of the input image and the partial images of the reference images generated by the image conversion step;

a three-dimensional object model registration step of registering the plurality of the representative three-dimensional object models in the representative three-dimensional object model storage section;

a reference image registration step of registering the reference images in the reference image storage section;

a reference image matching result update step of calculating a similarity in the second image matching step, when a new representative three-dimensional object model is registered in the representative three-dimensional object model storage section in the three-dimensional object model registration step, or when a new reference image is registered in the reference image storage section in the reference image registration in, and adding the calculated similarity to the similarities stored in the reference image matching result storage section; and

a three-dimensional object model generation step of, in response to addition of the calculated similarity to the similarities stored in the reference image matching result storage section by the reference image matching result update step, generating the reference three-dimensional object model associated with the reference image by combining the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section based on the added similarity, and registering the generated reference three-dimensional object model in the reference three-dimensional object model storage section.

54. (previously presented): The computer readable recording medium according to claim 53, wherein at the three-dimensional object model generation step, the reference three-dimensional object models associated with each reference image among the reference images stored in the reference image storage section is generated by combining the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section for a partial region of each of the reference images, based on

similarities obtained between the partial region of each of the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section, and the generated reference three-dimensional object models are registered in the reference three-dimensional object model storage section.

55. (currently amended): T~~he computer readable recording medium according to claim 52,~~ A computer readable recording medium storing a program for making a computer execute an image matching method to retrieve a reference image similar to an input image, the image matching method comprising:

a step of making a first match between the input image and a plurality of representative three-dimensional object models;

a step of making a second match between the reference image and the plurality of the representative three-dimensional object models;

a step of retrieving the reference image similar to the input image based on the first match and the second match;

a step determining a reference three-dimensional object model associated with the reference image similar to the input image;

a conversion step of equating an input condition of the input image with an input condition of the reference image by converting the input image and/or the reference image based on the determined reference three-dimensional object model;

a step of retrieving the reference image similar to the input image by making a third match between the input image and the reference image equated to the input condition of the input image;

an image input step of inputting the input image;

a step of storing the plurality of the representative three-dimensional object models in a representative three-dimensional object model storage section;

a first image generation step of generating at least one comparison image close in input condition to the input image for each representative three-dimensional object model among the plurality of the representative three-dimensional object models based on the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section;

a first image matching step of calculating similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model generated by the first image generation step, and selecting the at least one comparison image of a representative three-dimensional object model among the plurality of the representative three-dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the first image matching step;

a step of storing reference images of objects in a reference image storage section;

a step of storing similarities between the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section, in a reference image matching result storage section;

a result matching step of extracting reference images similar to the input image based on the similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model calculated by the first image matching step and the similarities between the reference images and the plurality of the representative three-dimensional object models stored in the reference image matching result storage section;

a step of storing reference three-dimensional object models associated with each reference image among the reference images stored in the reference image storage section;

an image conversion step of obtaining reference three-dimensional object models associated with the reference images extracted by the result matching step, from the reference three-dimensional object model storage section, equating the input condition of the input image with the input condition of each of the reference images extracted by the result matching step by converting the reference images extracted at the result matching step based on the obtained reference three-dimensional object models, and generating a partial image of the input image and partial images of the reference images equated to the input condition of the input image; and

a partial image matching step of calculating a similarity between the partial image of the input image and the partial images of the reference images generated by the image conversion step,

wherein at the first image matching step, a similarity between the input image and the at least one comparison image of the each representative three-dimensional object model for a partial region of the input image is calculated,

the reference image matching result storage section stores similarities between the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section for the partial region of each of the reference images, and

at the result matching step, the reference images similar to the input image are extracted based on the similarities between the input image and the at least one comparison image of the each representative three-dimensional object model calculated by the first image matching means for the partial region of the input image and the similarities between the reference images and the plurality of the representative three-dimensional object models for the partial region of each of the reference images stored in the reference image matching result storage section.

56. (currently amended): ~~The computer readable recording medium according to claim 52,~~ A computer readable recording medium storing a program for making a computer execute an image matching method to retrieve a reference image similar to an input image, the image matching method comprising:

a step of making a first match between the input image and a plurality of representative three-dimensional object models;

a step of making a second match between the reference image and the plurality of the representative three-dimensional object models;

a step of retrieving the reference image similar to the input image based on the first match and the second match;

a step determining a reference three-dimensional object model associated with the reference image similar to the input image;

a conversion step of equating an input condition of the input image with an input condition of the reference image by converting the input image and/or the reference image based on the determined reference three-dimensional object model;

a step of retrieving the reference image similar to the input image by making a third match between the input image and the reference image equated to the input condition of the input image;

an image input step of inputting the input image;

a step of storing the plurality of the representative three-dimensional object models in a representative three-dimensional object model storage section;

a first image generation step of generating at least one comparison image close in input condition to the input image for each representative three-dimensional object model among the plurality of the representative three-dimensional object models based on the plurality of the

representative three-dimensional object models stored in the representative three-dimensional object model storage section;

a first image matching step of calculating similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model generated by the first image generation step, and selecting the at least one comparison image of a representative three-dimensional object model among the plurality of the representative three-dimensional object models which has a greatest similarity with the input image based on the similarities calculated by the first image matching step;

a step of storing reference images of objects in a reference image storage section;

a step of storing similarities between the reference images stored in the reference image storage section and the plurality of the representative three-dimensional object models stored in the representative three-dimensional object model storage section, in a reference image matching result storage section;

a result matching step of extracting reference images similar to the input image based on the similarities between the input image and the at lease one comparison image of the each representative three-dimensional object model calculated by the first image matching step and the similarities between the reference images and the plurality of the representative three-dimensional object models stored in the reference image matching result storage section;

a step of storing reference three-dimensional object models associated with each reference image among the reference images stored in the reference image storage section;

an image conversion step of obtaining reference three-dimensional object models associated with the reference images extracted by the result matching step, from the reference three-dimensional object model storage section, equating the input condition of the input image with the input condition of each of the reference images extracted by the result matching step by converting the reference images extracted at the result matching step based on the obtained reference three-dimensional object models, and generating a partial image of the input image and partial images of the reference images equated to the input condition of the input image; and

a partial image matching step of calculating a similarity between the partial image of the input image and the partial images of the reference images generated by the image conversion step,

wherein at the result matching step, similarities between the similarities between the input image and the at least one comparison image of the each representative three-dimensional object model and the similarities between the reference images and the plurality of the representative three-dimensional object models are calculated, and in the calculation, the resultant similarities are provided with weights based on candidate precedence of similarities between the input image and the comparison images and the at least one comparison image of the each representative three-dimensional object model.

57. (canceled).